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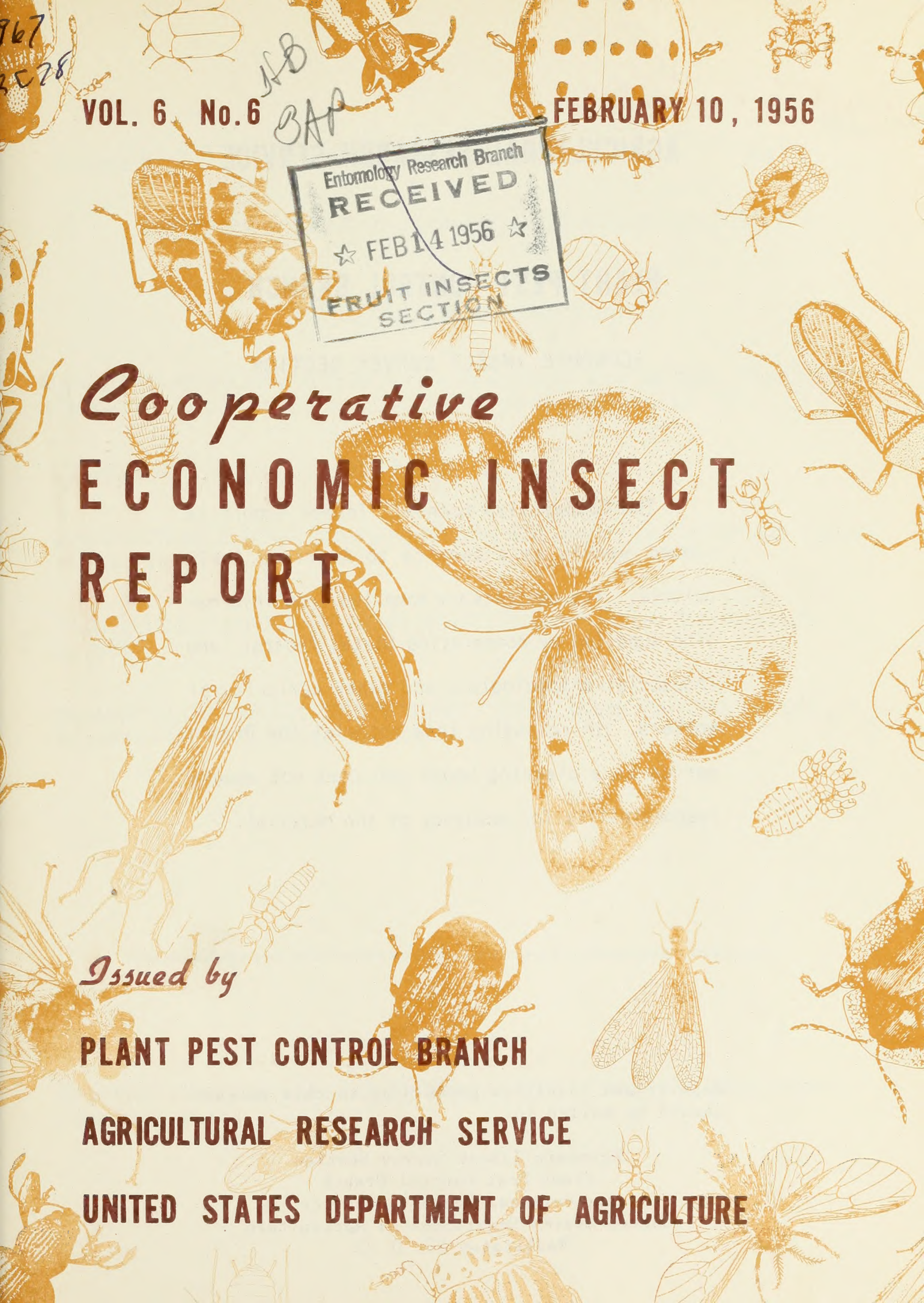

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FRUIT INSECTS
SECTION

# *Cooperative* ECONOMIC INSECT REPORT

*Issued by*

PLANT PEST CONTROL BRANCH
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

## PLANT PEST CONTROL BRANCH

### ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Plant Pest Control Branch
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Volume 6 February 10, 1956 No. 6

# COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

SPOTTED ALFALFA APHID active in areas of New Mexico, Texas and Oklahoma. Continues lower than last year in Arizona. (p. 93).

CHINCH BUG outlook for 1956 (map). (p. 94).

FALSE CHINCH BUGS damaging turnips and lettuce in Rio Grande Valley, Texas. (p. 95).

Distribution of MEXICAN BEAN BEETLE in the United States (map). (p. 96).

SUMMARY OF INSECT CONDITIONS 1955 - North Carolina (p. 100), Arkansas (p. 106), Alaska (p. 110).

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Reports in this issue are for the week ending February 3, 1956, unless otherwise stated.

## WEATHER FOR THE WEEK ENDING FEBRUARY 6, 1956

Snowstorms raging across central and eastern New Mexico and northwestern Texas were the worst experienced in that area in half a century. They began on Wednesday and continued through Friday, blanketing the area with snowfall ranging from about 6 to 18 inches, paralyzing traffic with drifts to 9 feet, marooning school children and disrupting telephone and power service. All but the southern and extreme eastern parts of Texas were under coatings of snow and ice. The weather was much colder than usual over the western two-thirds of the Nation. This condition existed as the high pressure center which had moved in from Canada became stagnated in that area early in the period. The eastern third of the Nation and a small area in the upper Lake region experienced above normal temperatures. In the West, average temperatures were below normal by -21° in the areas of eastern Washington and Oregon, Idaho and southwestern Montana and by -18° in the southeastern Colorado-western Texas areas. Freezing temperatures were observed in northern and western portions of Texas on all days, while on some occasions they extended beyond the southwest border of the State. Fronts were reported on the 3rd from the Pomona area of Calif., necessitating some firing in citrus orchards. On February 1, Pocatello, Idaho, Airport reported -27°F, its lowest February temperature for an 18 year period of record. Warm moist Gulf air being forced over the colder Continental air caused most of the week's significant precipitation. Heavy to moderate weekly amounts fell as rain, snow, sleet, or freezing rain in the Texas-New Mexico blizzard area and from the Gulf Coast northeastward as far as the New England States.

The highest weekly amounts, ranging from 4 to over 6 inches, were recorded in eastern Tennessee and northern Mississippi, Alabama, and Georgia. Elsewhere over the country precipitation was mostly light to occasionally moderate. The snow cover now extends southward into the Texas Panhandle, and portions of New Mexico, with 5 inches at Lubbock and Amarillo, Texas. Elsewhere there is little change over last week in depths or southward extent. Although snow occurred intermittently along the Canadian Border and in the Central Great Plains on eastward to the Atlantic Coast, some melting occurred or falls were light. Depths in the extreme North range up to 36 inches, reported at Houghton, Mich. In the western mountain areas Twin Lakes, Calif. reported a depth of 107 inches, Crater Lake, Oreg., 118 inches, and Mount Baker Lodge, Wash., 196 inches. Rivers and lakes in the New England States are mostly frozen over and ice thickness is increasing in the North with Greenville, Me., reporting 28 inches. Thicknesses on the Missouri River are 25 inches at Huron, S. Dak., and 26 inches at Bismarck, N. Dak. On the Mississippi, La Crosse, Wisc., reports 16 inches, while in the Great Lakes area Duluth, Minn., gives a measurement of 21 inches of ice. (Summary Supplied by U. S. Weather Bureau).

## CEREAL AND FORAGE INSECTS

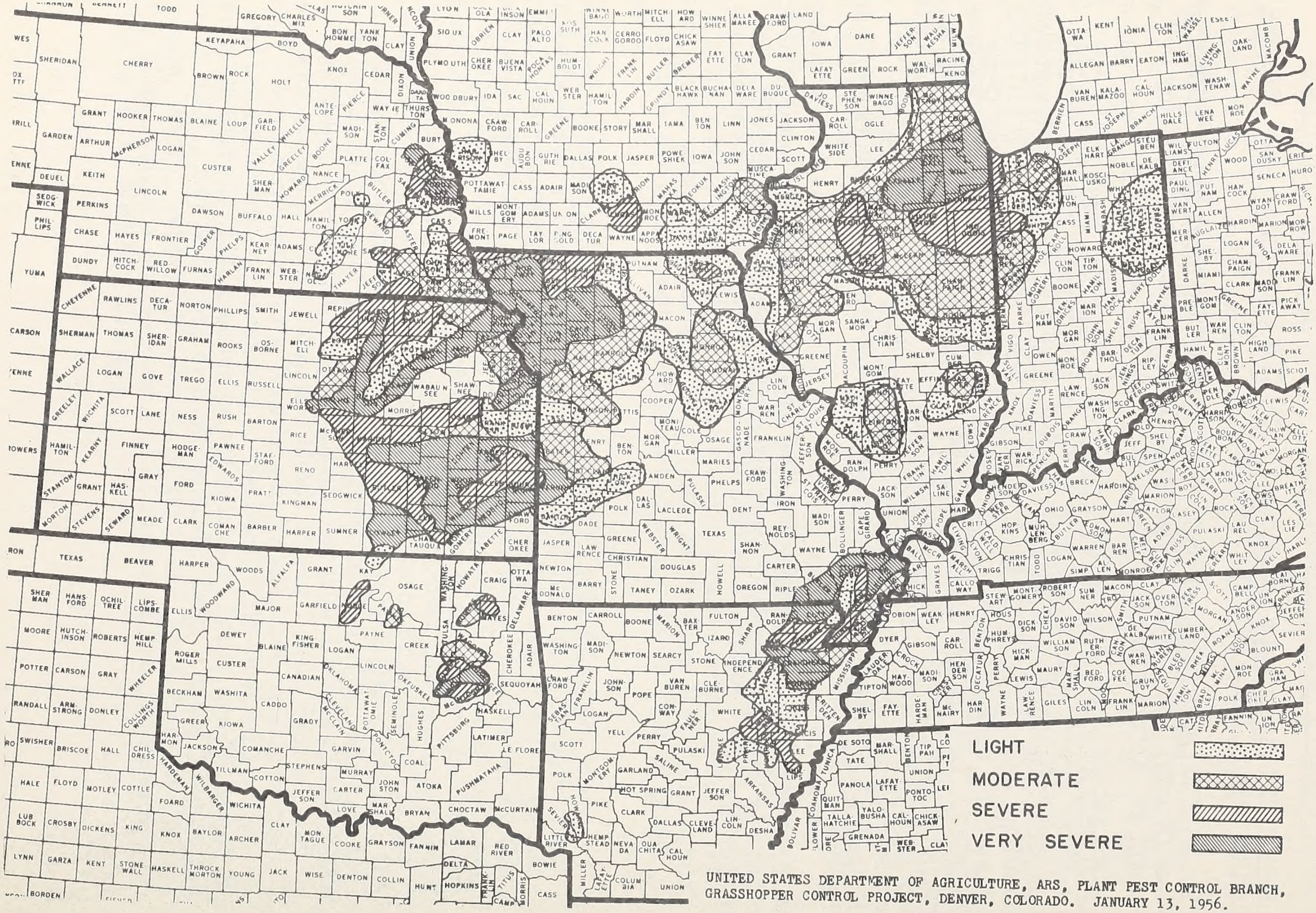
GREENBUG (Toxoptera graminum) - TEXAS - Medium, local infestation on oats in Falls County. (Atkins).

PEA APHID (Macrosiphum pisi) - ARIZONA - General in tall alfalfa in Pinal County, Jan. 23-25. Infestation light to medium, probably not enough to warrant control at that time. (Ariz. Coop. Rept.).

SPOTTED ALFALFA APHID - ARIZONA - Reported infesting shrub alfalfa or alfalfa bush (Medicago sp.), an ornamental near Scottsdale, Jan. 26. Populations on alfalfa lower than at this time in 1955 and even seedlings are not being treated. (Ariz. Coop. Rept.). NEW MEXICO - Infestations medium to heavy in Dona Ana, Eddy, De Baca and Quay Counties. Low temperatures decrease effectiveness of insecticides, but not size of infestations. (Durkin, Jan. 28). OKLAHOMA - Injuring new growth of alfalfa in Oklahoma County. (Stiles). TEXAS - Light, widespread infestations on alfalfa in Zavala and Dimmit Counties. (Richardson). Medium, local infestations on alfalfa in Fort Bend County. (Hardy).

MOLE CRICKET - GEORGIA - Heavy damage to grass on fairway of golf course in Laurens County. Some affected areas one-half acre in size. (Johnson).

# CHINCH BUG INFESTATION IN FALL OF 1955



UNITED STATES DEPARTMENT OF AGRICULTURE, ARS, PLANT PEST CONTROL BRANCH, GRASSHOPPER CONTROL PROJECT, DENVER, COLORADO. JANUARY 13, 1956.

## FRUIT INSECTS

SAN JOSE SCALE (Aspidiotus perniciosus) - FLORIDA - Severely infesting leaves of pear at Glen St. Mary, Baker County, Jan. 5.(King). Adults averaging two per stem of pear at Beresford, Volusia County, Jan. 24. (Roberts).

A MITE (Eriophyes prunidemissae) - OREGON - New species collected August 24, 1955 at The Dalles on Prunus demissa. (Det. H. H. Keifer). Species known only from type material collected at McCloud, California and The Dalles, Oregon. (Swenson).

COCONUT MEALYBUG (Pseudococcus nipae) - FLORIDA - Numerous on avocado at Lutz, Hillsborough County, Jan. 24. (Thalgott).

A TWIG PRUNER (Hypermallus villosus) - SOUTH CAROLINA - Numerous complaints of grape vines being damaged in Spartanburg County. (Feree).

## TRUCK CROP INSECTS

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - GEORGIA - Moderate damage to leaves of turnips in Jasper County. (Johnson).

FALSE CHINCH BUG (Nysius ericae) - TEXAS - Heavy, local infestations on wild mustard and spinach in Zavala County. (Richardson). Heavy damage occurring in turnip and lettuce fields in Rio Grande Valley. (Wene, Deer).

CABBAGE LOOPER (Trichoplusia ni) - TEXAS - Light, local infestations on cabbage in Rio Grande Valley. (Wene, Deer).

DIAMONDBACK MOTH (Plutella maculipennis) - TEXAS - Medium to heavy populations of larvae in many cabbage fields in Rio Grande Valley. (Wene, Deer).

CABBAGE APHID (Brevicoryne brassicae) - TEXAS - Light, local infestations scattered throughout Rio Grande Valley. (Wene, Deer).

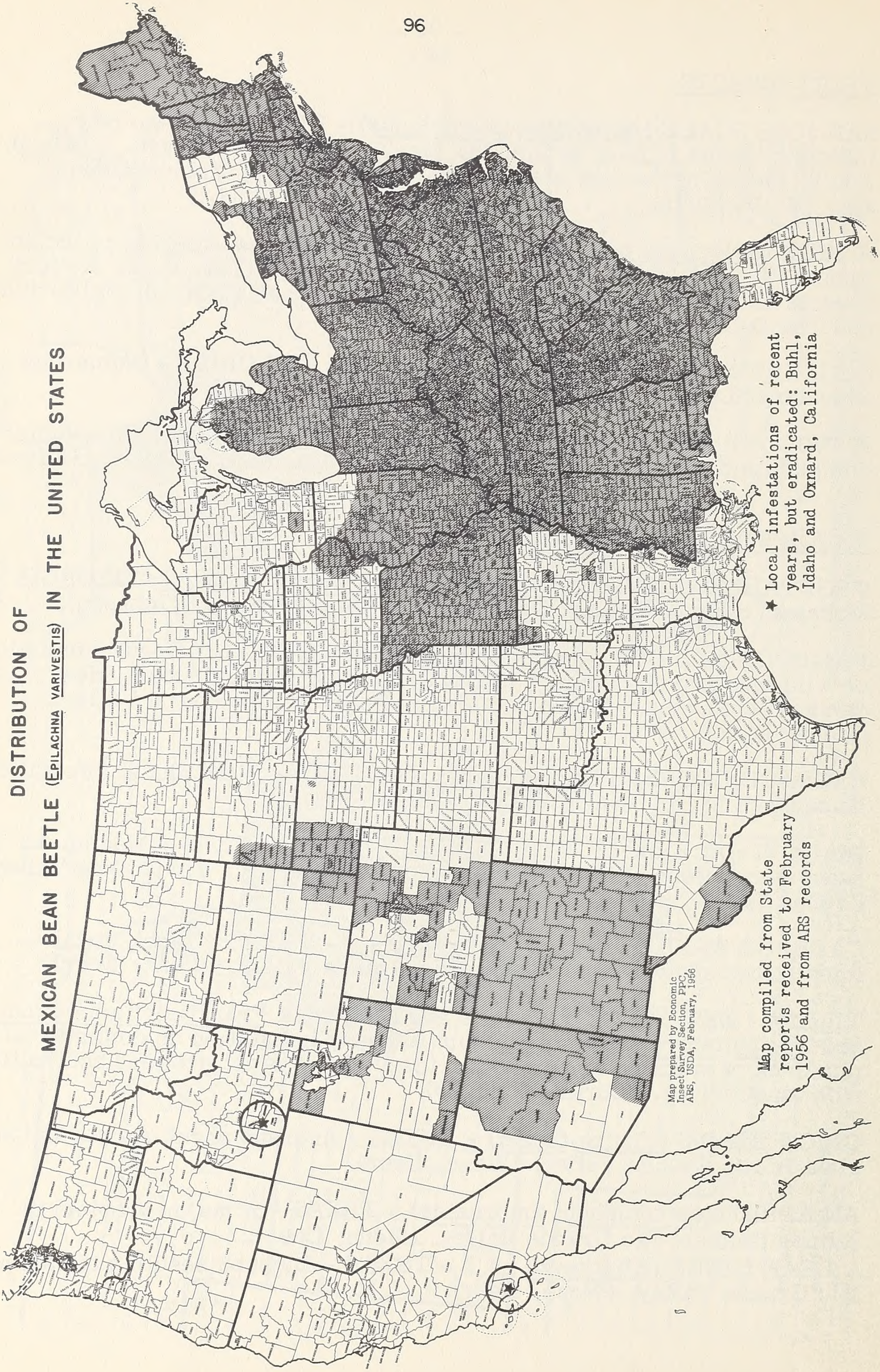
THRIPS - NEW MEXICO - Adults and nymphs of Frankliniella moultoni and Thrips tabaci active in medium to heavy infestation on commercial plantings of seedling onions in Mesilla Valley. Most growers controlling with insecticides. (Durkin, Jan. 28).

ONION THRIPS (Thrips tabaci) - TEXAS - Average about one per onion plant in Rio Grande Valley. (Wene, Deer).

AN APHID (Macrosiphum ambrosiae) - TEXAS - A major problem in lettuce fields of Rio Grande Valley. (Wene, Deer).

A LEAF MINER (Liriomyza sp.) - TEXAS - Light on seedling tomatoes in Rio Grande Valley. (Wene, Deer).

## DISTRIBUTION OF
## MEXICAN BEAN BEETLE (EPILACHNA VARIVESTIS) IN THE UNITED STATES



★ Local infestations of recent years, but eradicated: Buhl, Idaho and Oxnard, California

Map compiled from State reports received to February 1956 and from ARS records

Map prepared by Economic Insect Survey Section, PPC, ARS, USDA, February, 1956

## INSECTS AFFECTING MAN AND ANIMALS

CATTLE LICE - NORTH DAKOTA - Survey in parts of Cass and Traill Counties showed medium infestation of *Haematopinus eurysternus* in a herd of feeder cattle. A few animals with heavy infestations were losing weight. Light to medium infestation of *Bovicola bovis* on two young bulls and young dairy cows in herds where no controls were applied. Infestations of *Linognathus vituli* on two young cows in a dairy herd. (N. D. Ins. Rept. Serv.).

CATTLE GRUBS - VIRGINIA - Averaged 1.2 per head in a herd of 31 at Blacksburg. For the total, 46 percent were closed and 54 percent were open. (Turner, Raffensperger).

SHEEP SCAB MITE (*Psoroptes equi ovis*) - VIRGINIA - Found on 47 of 4575 sheep inspected in Virginia during January, and 510 head were dipped. (Va. Livestock Health Bul., Jan. 1956).

### Livestock Pest Situation, Oklahoma

Of 77 head of cattle examined in Antlers area Jan. 30 - 31, 36 were infested with one or both of BLACK-LEGGED TICK and LONE STAR TICK. Average number of CATTLE GRUBS per animal was 3.2. A large percentage of grubs have fallen to ground. Six of the 77 head were infested with *Solenopotes capillatus.* Average number of grubs per animal in Harper County Jan. 30, for 350 steers from 9-12 months old was 9.1; for 250 cows, 2-4 years old, average was 4.3 per animal. (Howell, Coppock).

## FOREST, ORNAMENTAL AND SHADE TREE INSECTS

MEALYBUGS - NEW MEXICO - Heavy populations on nursery stock in several nurseries in Albuquerque. (Durkin, Jan. 28).

SCALE INSECTS - FLORIDA - All stages of *Furcaspis biformis* averaging 50 per leaf on terrestrial orchid at Rockdale, Dade County, January 5. Average of 10 *Howardia biclavis* adults per stem of snowberry at Homestead, Dade County, January 6. (Miles). Average of 121 *Parlatoria crotonis* adults per leaf of croton at Ft. Myers, Lee County, January 5. (Denmark). All stages of *Ceroplastes ceriferus* averaging 1-6 per plant on podocarpus at Winter Haven, Polk County, January 16. (Whitmore).

## STORED PRODUCT INSECTS

STORED GRAIN PESTS - OKLAHOMA - Survey of 12 premises in eastern Oklahoma showed 10 infested with one or more of the following: black carpet beetle, cadelle, Angoumois grain moth, saw-toothed grain beetle, confused flour beetle, lesser grain borer and cowpea weevil. Economic damage was present in five establishments with very serious damage in one. (Howell, Coppock).

AN OTITID (*Chrysomyza demandata*) - OKLAHOMA - Widespread in trench silos of Alfalfa County. (Stiles).

## MISCELLANEOUS INSECTS

### Light Trap Collections:

TEXAS (College Station, 1/30-2/3/56): *Pseudaletia unipuncta*, 16; *Prodenia ornithogalli*, 22; *Feltia subterranea*, 11; *Agrotis malefida*, 10. (Winter Haven, 1/16-31/56): *P. unipuncta*, 80; *P. ornithogalli*, 44; *Laphygma frugiperda*, 1; *Agrotis ypsilon*, 4; *F. subterranea*, 18; *Heliothis zea*, 1; *A. malefida*, 93. (Weslaco, 1/16-31/56): *P. unipuncta*, 43; *P. ornithogalli*, 500; *L. frugiperda*, 4; *A. ypsilon*, 35; *F. subterranea*, 208; *H. zea*, 24; *A. malefida*, 301. LOUISIANA (Tallulah, (1/27-2/2/56): *A. malefida*, 3; *A. ypsilon*, 14; *F. subterranea*, 9; *P. ornithogalli*, 16; *P. unipuncta*, 22. SOUTH CAROLINA (Charleston, 1/16-22/56): *P. unipuncta*, 10; *A. ypsilon*, 19; *F. subterranea*, 1. ALABAMA (Auburn, 1/30-2/4): *A. malefida*, 1. GEORGIA (Tift County, 1/21-27): *P. unipuncta*, 1; *A. malefida*, 2; *F. subterranea*, 4.

TERMITES - FLORIDA - Adults of *Prorhinotermes simplex* collected from door frame at Ft. Lauderdale, Broward County, Dec. 17, 1955, and swarming, same city, Jan. 3, 1956. Winged reproductives of *Reticulitermes hageni* collected at Ft. Lauderdale, Jan. 22. (Det. L. A. Hetrick). (Clements).

## RECENT INTERCEPTIONS AT PORTS OF ENTRY

Of interest was the recent interception of a living larva of the so-called cabbage moth, *Mamestra brassicae* (L.), on cabbage in ships' stores from the Netherlands at Mobile, Alabama (Turk). This insect has been reported injurious to crucifers, particularly cabbage throughout most of Europe, northern Asia and West Africa. It is said to cause considerable injury in some parts of its extensive range every year with very serious damage in occasional years in certain localities. Twenty to 30 percent annual injury to cabbage in Bulgaria was reported for a number of years. In Japan, it is said to be a pest of some importance on soybeans and peas. In addition to cabbage and cauliflower, its preferred hosts, it is said to attack a wide variety of plants including rape, turnip, beets, carrots, eggplant, flax, lettuce, onions, peas, potato, soybeans, sunflower, tobacco, tomato, poppy and many weeds. Observations on its life history in Bulgaria indicate it overwinters in the pupal stage in the soil. Adults appear in early spring. The females deposit eggs in large masses on leaves for a period of about a week (over 2,000 eggs were recorded for one female in laboratory studies). Eggs hatch in about a week and the larvae feed for about a month on the leaves often defoliating the plants. Larvae at times seem to bore into the heart of the plant, particularly cabbage. Reports from Japan indicate the larvae feed only at night. The pupal stage lasts 2-8 weeks in the summer and 4-6 months or longer during the winter. There are two generations a year. Living larvae of M. brassicae have been intercepted on numerous occasions at various ports on cabbage, and cauliflower in ships' stores from European sources. Occasional interceptions have been recorded in various other hosts such as carrot, celery, parsley, turnip, herbs, strawberries and shamrocks from European countries. This insect is not known to occur in the United States. (Compiled - Plant Quaratine Branch).

# SUMMARY OF INSECT CONDITIONS - 1955

## NORTH CAROLINA

Reported by M. H. Farrier

Only one newly-introduced injurious insect pest was recorded in the State during 1955. In a special spring survey the ALFALFA WEEVIL (Hypera postica) was found on alfalfa in Granville and Vance Counties where it has spread across into North Carolina from Virginia. A PARASITIC MITE (Haemolaelaps megaventralis) was taken from poultry litter in Wake, Henderson and Alexander Counties for the first time in the State. As large groups, flea beetles, lace bugs and leafhoppers were particularly abundant during the year.

### General Pests

The CORN EARWORM (Heliothis zea) was without question the most important single insect pest in the State during the past season. Eggs and first-instar larvae were first observed on young corn in Wake County during week of May 23. Infestations in sweet corn in Duplin County were heavy by June 25. Damage was not limited only to Coastal Plain counties but later in the season extended westward into central counties, attacking tomatoes and butterbeans in home gardens and also field peas, alfalfa, Sudangrass. Especially important was the molding milo heads during heavy rains after being attacked. Improper filling of some field corn was noted in south central counties due to this pest. Small BOLLWORM larvae were first noticed attacking cotton in Scotland County during the week of May 23. Five to 95 percent of bolls were damaged and larvae were eating leaves in fields examined in Harnett County on August 19. The population increased markedly in the Piedmont region in late August. Though difficulty was encountered in using characters heretofore believed reliable for separation of larvae of Heliothis zea and Heliothis virescens, counts on tobacco heads during week of August 19 indicated about 75 percent of larvae were H. zea and only 25 percent were the TOBACCO BUDWORM (H. virescens).

Local heavy infestations of CHINCH BUG (Blissus leucopterus) occurred in south central and eastern counties on small grains from mid-March to early June. General, but only locally severe infestations were noted through mid-September in corn and milo in the Piedmont region. ARMYWORM (Pseudaletia unipuncta) first attacked oats in Carteret County in mid-April and later destroyed the field. Scattered, heavy, local attacks of many small grains, pastures and forage crops occurred in Piedmont region through May. In August, there were moderate to severe attacks of Sudangrass and millet in the same areas. In early June larvae of early instars were present in the western part of State. BLACK CUTWORM (Agrotis ypsilon) lightly damaged corn early in numerous Hyde County fields. Cabbage was injured by the VARIEGATED CUTWORM (Peridroma margaritosa) in Carteret County. Numerous infestations of unidentified cutworms from various areas of the State were reported in young tobacco and cotton. GRASSHOPPERS (Melanoplus mexicanus and

M. femur-rubrum) caused light replanting of newly-set tobacco in southeastern counties by eating out the terminal bud. They were numerous on alfalfa in Wake County in early July. JAPANESE BEETLE (Popillia japonica) caused moderate to severe damage in localized outbreaks on ornamentals and garden plants as well as tobacco and soybeans. SOUTHERN CORNSTALK BORER (Diatraea crambidoides) damaged corn in south central counties and LESSER CORNSTALK BORER (Elasmopalpus lignosellus) caused 25 percent loss in some soybean fields in Currituck County. STALK BORER (Papaipema nebris) damaged some corn in Craven County. Other general feeders were PALE-SIDED CUTWORM (Agrotis malefida), YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli), SALT-MARSH CATERPILLAR (Estigmene acrea) and the VEGETABLE WEEVIL (Listroderes costirostris obliquus).

## Cereal and Forage Crops

Corn was severely damaged in some instances, mainly in northeastern counties by the SUGARCANE BEETLE (Euetheola rugiceps). SEED-CORN MAGGOT (Hylemya cilicrura) destroyed an entire stand in Cleveland County and was more severe in newly-set tobacco in fields planted in small grain the previous year. Also damaging corn were MAIZE BILLBUG (Calendra maidis), ELONGATE FLEA BEETLE (Systena elongata) and CORN LEAF APHID (Rhopalosiphum maidis). Soybeans were attacked principally by the BEAN LEAF BEETLE (Cerotoma trifurcata). The following damaged soybeans lightly: MEXICAN BEAN BEETLE (Epilachna varivestis), VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) A GRAPE COLASPIS (Colaspis sp.), GREEN CLOVERWORM (Plathypena scabra) and THRIPS. LEAFHOPPERS and THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) caused general and moderate damage in alfalfa in late summer over the entire Piedmont region. PEA APHID (Macrosiphum pisi) was spotty on alfalfa throughout the State. GREENBUG (Toxoptera graminum) was widespread in Forsyth County on small grain in the spring and in Harnett County in the fall. POTATO LEAFHOPPER (Empoasca fabae) caused moderate damage to peanuts in eastern counties. TOBACCO THRIPS (Frankliniella fusca) and other thrips averaged 6.8 per 10 terminals on peanuts in Edgecomb County in mid-May.

## Fruit Insects

The apple and peach crops were very light due to killing late-spring frosts. Larvae of CODLING MOTH (Carpocapsa pomonella) survived these freezes and the first moth was taken in a bait pail in Wilkes County on April 19. One moderate infestation was observed in an apple orchard in Ashe County which was not sprayed until extent of freeze damage was ascertained. Over-wintering pupae of ORIENTAL FRUIT MOTH (Grapholitha molesta) were unaffected by late-spring freezes and first adult was taken in bait pail in Wilkes County on April 6. One peach orchard in Macon County was moderately damaged. First adult of RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) was taken May 2 in Wilkes County. Young APPLE APHIDS (Aphis pomi) were killed by late March freeze but unhatched eggs were not affected. First crawlers of OYSTERSHELL SCALE (Lepidosaphes ulmi) appeared April 8-15 and peak had passed by May 2 in Wilkes County. PEACH THEE BORER (*Sanninoidea exitiosa*) was moderate to severe in peach trees where not controlled. Average emergence of adults in an untreated group of trees in Wake County was 5.4 per tree. A light infestation of SCURFY SCALE (*Chionaspis furfura*) was reported from Watauga County on apple and A GRAPE TUBE GALL (*Itonida viticola*) was infesting Seneca grape in Iredell County. First-generation eggs of the EUROPEAN RED MITE (*Metatetranychus ulmi*) were found April 18 in Alexander County; however only the first eggs of the over-wintering female of A SPIDER MITE (*Tetranychus schoenei*) were found during the week of May 14. Only one infestation of the TWO-SPOTTED MITE was noted in one apple orchard in Alexander County.

## Truck Crop Insects

The most severe and widespread tobacco plant bed pest was TOBACCO FLEA BEETLE (*Epitrix hirtipennis*). Other plant bed pests were MOLE CRICKETS (*Scapteriscus acletus* and *Gryllotalpa hexadactyla*), VEGETABLE WEEVIL, MIDGE larvae, CRANE FLY larvae, CUTWORMS, APHIDS and WHITE GRUBS. Newly-set tobacco was attacked by GRASSHOPPERS and by TOBACCO WIREWORM (*Conoderus vespertinus*), with injury by the latter ranging from 20 - 95 percent and limited to the Coastal Plain. TOBACCO HORNWORM (*Protoparce sexta*) eggs and small larvae were reported during week of May 23 in southeastern counties. Peak of second brood reached the week of July 22 in southeastern counties, after which insecticide applications eliminated the natural trend except in untreated fields where the last larval instars were present the week of August 12. By September 2, all tobacco in southeastern counties had been primed; however the uncut stalks provided ample food for the third brood. Little trouble was experienced in the northern counties with hornworms and none were present in the burley areas. TOBACCO FLEA BEETLE was light in all areas through early July but damage was cumulative. By mid-July, damage reports were spotty but generally distributed. Many southeastern fields were harvested before damage became severe but use of insecticides particularly for the flea beetle, were necessary in north central counties. Oviposition in the midrib of the leaf by the FOUR-SPOTTED TREE CRICKET (*Nigricornis quadripunctatus*) caused light damage generally in Coastal Plain and eastern Piedmont counties but some fields were severely damaged. GREEN PEACH APHID (*Myzus persicae*) was general throughout flue-cured tobacco areas and caused only local damage during cooler weather. Feeding of BUDWORM (*Heliothis virescens*) and CORN EARWORM (*Heliothis zea*) was limited mainly to the buds and in areas of heavy populations harvest time preceded the population peak. SUCKFLY (*Cyrtopeltis minimus*) infestations were spotty and limited to southeastern counties on suckers. A SOD WEBWORM (*Crambus* sp.) injured 90 percent of a young field of tobacco in Nash County and WHITE-FRINGED BEETLES (*Graphognathus* sp.) caused severe damage in a field in Columbus County. The MEXICAN BEAN BEETLE was reported more difficult to control in Ashe County, perhaps due to extensive rains. After frosts, adults were found feeding on alfalfa in Wake County and reported attacking Ladino clover in

Transylvania County, but larvae were absent on both occasions. CABBAGE LOOPER (Trichoplusia ni) damaged tobacco lightly in spots but was generally distributed throughout eastern counties on cabbage. An entire population on collards was wiped out by a disease, presumably virus, during heavy rains. IMPORTED CABBAGEWORM (Pieris rapae) and HARLEQUIN BUG (Murgantia histrionica) and APHIDS (Brevicoryne brassicae and Myzus persicae) were locally severe, sometimes even devastating, in southeastern counties. EGGPLANT FLEA BEETLE (Epitrix fuscula) attacking eggplants and potatoes and POTATO FLEA BEETLE (Epitrix cucumeris) attacking potatoes, were locally severe in eastern counties Potatoes were heavily attacked by COLORADO POTATO BEETLE (Leptinotarsa decemlineata) in June in eastern counties and the VEGETABLE WEEVIL damaged turnips. SQUASH BUG (Anasa tristis) caused complete losses in two fields in Currituck County but did little damage in other eastern counties. EGGPLANT LACE BUG (Gargaphia solani) increased to destructive numbers on untreated eggplants in Duplin County. Moderate damage occurred to snap beans in early June due to the BEAN LEAF BEETLE (Cerotoma trifurcata). SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) moderately damaged various truck crops in eastern counties. TOMATO RUSSET MITE (Vasates lycopersici) was taken on petunia in a greenhouse in Burke County and SPIDER MITES were encountered on strawberry, tomatoes and snapbeans in central eastern counties.

### Cotton Insects

First reports of BOLL WEEVIL (Anthonomus grandis) were received May 16 and were very light through the second brood in early July. By mid-July about half the counties reporting indicated an average of over 10 percent of squares punctured. Of all counties reporting, the following indicated high square punctures in late July and early August: Bertie, Greene, Martin, Sampson, Scotland, Wake, Wayne, and Wilson. Migration to woods was first noticed during week of August 26. BOLLWORMS were more severe in some counties than BOLL WEEVIL. Further summary may be seen above under CORN EARWORM. Cotton was hardest hit early by THRIPS in Union and Cleveland Counties but generally little damage occurred. The CORN ROOT APHID (Anuraphis maidi-radicis) and CORNFIELD ANT (Lasius niger alienus americanus) severely damaged a field of cotton in Lee County. A few COTTON APHIDS (Aphis gossypii) were present in Scotland and Union Counties in May but damage was negligible. Five species of SPIDER MITES (Tetranychus telarius, T. desertorum, T. tumidus, T. atlanticus, T. schoenei) were found on cotton in North Carolina during the year. Damage was light in eastern counties due to heavy rains but dry conditions in central counties enabled population increases to the point where general growth and boll size were reduced in numerous fields, mainly by Tetranychus telarius.

### Forest, Ornamental and Shade Tree Insects

Although entirely misrepresentative of economic losses incurred throughout the western part of the State by SOUTHERN PINE BEETLE (Dendroctonus frontalis) only one report was received of damage to pine in Buncombe County. BLACK TURPENTINE BEETLE (Dendroctonus terebrans) killed pine in a local infestation in Northampton County. ENGRAVER BEETLES (Ips calligraphus, Ips grandicollis, and Ips avulsus) caused serious and general damage to pine in Union, Anson; Stanley, Cabarrus, Hoke, Wake and Wayne Counties. WHITE PINE SAWFLY (Neodiprion pinetum) defoliated a young white pine thicket in Ashe County and RED-HEADED PINE SAWFLY (Neodiprion lecontei) occurred on pine in Caldwell County. BAGWORM (Thyridopteryx ephemeraeformis) caused spotty damage to evergreens throughout the State. Serious losses occurred on pecans in Alamance County from HICKORY SHUCK-WORM (Laspeyresia caryana). The BULB MITE (Rhizoglyphus echinopus) caused 30 percent loss of 3000 bulbs in storage in Alamance County, an entire field planting of gladiolus in Guilford County and damage was observed to Easter lilies at numerous retail outlets in the State.

## Stored Products Insects

Damage to structural wood by A TERMITE (Reticulitermes flavipes) is known to be general and occurs many times oftener than reported. They were also reported "devouring commercial plantings" of chrysanthemums in Caldwell County and were prevalent in several blueberry plantations in eastern counties. Three species of POWDER POST BEETLES were reported. Stephanopachys rugosus and Lyctus spp. attacked houses in Wake County and one adult of Xylobiops basilaris caused concern by boring into a cone of nylon thread in a textile mill at Lexington. Reports from Buncombe and Martin Counties indicated stored corn was being attacked by RICE WEEVIL (Sitophilus oryza). Light infestations of TOBACCO MOTH (Ephestia elutella) in tobacco pack houses were seen in Wayne, Wilson, Green, Wake and Harnett Counties. Infestations by ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) were observed in stored wheat in August and September in Buncombe and Wake Counties. CASEMAKING CLOTHES MOTH (Tinea pellionella) infested homes in Bertie, Burke and Wake Counties and hotels in Columbus and Pasquetank County. Dermestid larvae damaged home-cured meats in Warren County. Other stored products pests reported included COWPEA CURCULIO (Chalcodermus aeneus), erroneously reported as pea weevil (CEIR Vol. 5, No. 37), on garden and field peas in Union and Davidson Counties. The MURKY-MEAL CATERPILLAR (Aglossa caprealis) was found infesting stored tobacco in Columbus County.

## Insects Affecting Man and Animals

During and after the hurricanes, in August and early September, MOSQUITOES were a severe problem inland as far as Sampson and Halifax Counties, in some instances driving laborers from the fields. Biting and sweeping records were obtained for the following species in Halifax County: Aedes vexans, A. sollicitans, A. atlanticus-tormentor complex and Uranotaenia lowii. The latter, contrary to reports in the literature, was taken in biting collections. Aedes sollicitans was the more common species taken in light trap at Faison. Other species taken were Anopheles crucians, Aedes mitchellae, A. vexans, Culex pipiens and C. nigripalpus. A number of adults of the predatory mosquito Toxorhynchites rutilus septentrionalis were inside windows in Ashe County. One case of HEAD LOUSE (Pediculus humanus capitis) was found on a woman in Wake County. Three infestations of BROWN DOG TICK (*Rhipicephalus sanguineus*) were found in houses in Wake County. In all cases, dogs were living in the homes. Early in the season HOUSE FLY (*Musca domestica*) was not as prevalent as usual in the Piedmont area. STICKTIGHT FLEA (*Echidnophaga gallinacea*) heavily infested a flock of pullets in Rowan County. Local concern was caused by BLACK WIDOW SPIDER (*Latrodectus mactans*), A VINEGAR GNAT (*Drosophila hydei*), and CHIGGERS. A very severe epizootic of the SCREW-WORM (*Callitroga hominivorax*) occurred in late summer and early fall in south central counties. NORTHERN FOWL MITE (*Bdellonyssus sylviarum*) was usually severe in Sampson and Wake Counties during the winter and was increasing in a flock in Rockingham County in October. CHICKEN MITE (*Dermanyssus gallinae*) severely infested some poultry houses in Wake and Scotland Counties during the spring and summer. An AIR SAC MITE (*Cytodites nudus*) caused general debilitation in a Wake County pheasant flock. CATTLE LICE, WOOL MAGGOTS, HORSE FLIES and PUNKIES also came to attention during the year.

### Beneficial Insects

LADY BEETLES (*Coleomegilla fuscilabris* and *Hippodamia convergens*) and the INSIDIOUS FLOWER BUG (*Orius insidiosus*) were abundant in corn and other truck crops in Duplin County in June. Many colonies of the HONEY BEE (*Apis mellifera*) were starved out as a result of the "spring freeze." In some areas, scarcity of honey bees as pollinators was noted. Investigations on Top Sail Island indicated sufficient honey bees present in late July to pollinate the large acreages of melons. The first instance of a sour-wood honey flow as far east as Raleigh was seen June 15 - July 8. The horse nettle throughout the Piedmont was attacked by a LACE BUG but not severe enough to cause complete lack of fruiting.

### Miscellaneous Insects

Requests for identification and control of mites in fishworm cultures indicated the families Parasitidae and Uropodidae were usually represented. SPRINGTAILS were also present in the cultures and on springs and wells in Graham County. A quart of *Ataenius schwarzi* destroyed the Lepidoptera in the Faison light trap the night of July 14. EUROPEAN HORNET (*Vespa crabro germana*) captured honey bees at artificial feeding station in Caldwell County. BOXELDER BUG (*Leptocoris trivittatus*) caused local concern. The most commonly reported roach was the GERMAN COCKROACH (*Blattella germanica*). It was reported from homes in Nash and Iredell Counties and an apartment building in Alamance County. BROWN-BANDED ROACH (*Supella supellectilium*) was seen in numerous homes in Reidsville, Rockingham County. CLOVER MITES, usually in large numbers, caused concern by invading homes in Stokes, Person and Yadkin Counties in January, Harnett County in April, and Rockingham County in December where oviposition was observed. Numerous calls were received from Wake County residents for aid in flea control upon returning home from vacations in August and September.

SUMMARY OF INSECT CONDITIONS - 1955

## ARKANSAS

Reported by L. O. Warren

### Cereal and Forage Insects

ARMYWORM (Pseudaletia unipuncta) infestations were much lighter than in 1954. Only local areas in the delta had damaging infestations. Control applications were not generally applied. Natural control appeared to be responsible for a considerable reduction in infestations. Approximately 40 percent of larvae and pupae collected in the field were parasitized by hymenopterous and/or dipterous parasites. VARIEGATED CUTWORM (Peridroma margaritosa) infestations were light in small grain but heavy on early legume crops, particularly in central and western areas. CORN EARWORM (Heliothis zea) was heavy on early legumes in local areas and on alfalfa in late fall. Concurrent infestations of CORN EARWORM and GREEN CLOVERWORM (Plathypena scabra) on alfalfa reduced plant foliage by as much as 50 percent in individual fields of the Arkansas River Valley during late fall. THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) caused locally severe damage throughout the State. Damage was most severe in late fall. APHID infestations (Macrosiphum granarium, Rhopalosiphum maidis) were heavy on small grain in southwestern Arkansas and in local areas in the eastern half of the State during early spring. Parasites and predators were effective in reducing aphid infestations. SPOTTED ALFALFA APHID appeared in the State in late summer. Infestations were first detected on alfalfa in southwest area the last week of September. By December 1, infestations had been observed in the extreme four corners of the State and in most of the counties where alfalfa is grown. Infestations by January 1, 1956, were locally heavy in several of these counties and control efforts may be required this spring. CHINCH BUG (Blissus leucopterus) numbers were much lighter in 1955 than 1954. A few damaging infestations were reported on sorghum in southwest area. Elsewhere fall surveys showed greatest numbers concentrated in four northeastern counties. Favorable growing conditions and increased corn acreage favored the spread of SOUTHWESTERN CORN BORER (Diatraea grandiosella) which appeared in seven additional counties for the first time. EUROPEAN CORN BORER (Pyrausta nubilalis) was likewise favored by weather conditions and increased corn acreage. Infestations were detected in 18 additional counties and south of the Arkansas River for the first time. Infestations were heaviest in the northeastern counties east of Crowley's Ridge. Heavy infestations of FALL ARMYWORM (Laphygma frugiperda) appeared early in summer and continued locally heavy throughout the growing season. Growing conditions favored plant recovery or tolerance of infestations so that actual losses of corn due to FALL ARMYWORM were not heavy. CORN EARWORM infestations were about normal on corn but caused heavy damage to sorghums, particularly in the Arkansas River Valley. RICE WATER WEEVIL (Lissorhoptrus simplex) infestations were relatively light, causing no serious damage. Heavy infestations of RICE STINK BUG (Solubea pugnax) were observed early on wheat.

However, infestations on rice were lighter than in 1954 and no reports of crop losses were received. BEAN LEAF BEETLE (*Cerotoma trifurcata*) was present in much lighter numbers on soybeans in 1955 than in 1954. Economic damage was caused in a few late-planted fields of the Arkansas River Valley. GREEN CLOVERWORM likewise caused damage in late fall on soybeans in this same area. GRASSHOPPER infestations (mostly *Melanoplus* sp.) caused much less noticeable damage in 1955 than 1954. This was probably due in part to more succulent plant growth. Natural control was favored in northwest area by relatively cool and wet weather. Numbers were of economic proportion in local areas of southwest area and in very local areas elsewhere. Severe damage to Bermuda grass pastures was caused by a SKIPPER (*Atalopedes campestris*) in the northwestern quarter of the State. Larvae appeared in great numbers, moving as armyworms in search of food.

### Fruit Insects

Other than strawberries and bramble fruits, practically all fruit was destroyed by the hard freezing weather of late March. STRAWBERRY WEEVIL (*Anthonomus signatus*) infestations were about normal. Damage by STRAWBERRY CROWN BORER (*Tyloderma fragariae*) was light in 1955. This was due to better control efforts as well as reduced acreage. Some damage to peach orchards was caused by SHOT-HOLE BORER (*Scolytus rugulosus*) and by LESSER PEACH TREE BORER (*Synanthedon pictipes*). ORIENTAL FRUIT MOTH (*Grapholitha molesta*) likewise was locally heavy due to failure of growers to make insecticide applications because of absence of fruit. PEACH TREE BORER (*Sanninoidea exitiosa*) infestations appeared about normal.

### Truck Crop Pests

Damage caused by CUTWORMS to gardens was about normal. HORNWORMS (*Protoparce* sp.) caused light to moderate damage to tomatoes. GREEN PEACH APHID (*Myzus persicae*) numbers were light to non-existent in the Arkansas River Valley. Late bean crops were severely damaged by the CORN EARWORM in local areas. COWPEA CURCULIO (*Chalcodermus aeneus*) were locally important, causing loss of the crop for fresh packing in some instances. Early infestations of VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) damaged melon and tomato plantings in scattered areas.

### Cotton Insects

Seasonal weather conditions in late April and May were generally favorable to planting of cotton. In local areas rainfall was not sufficient and seedling emergence was either retarded or fields irrigated to obtain a stand. Cold weather in June retarded plant growth but did not appear to adversely affect BOLL WEEVIL (*Anthonomus grandis*). Weather in July and August was favorable to plant growth as well as boll weevil development over most of the State. Southwestern counties had a deficiency of rainfall during early summer. Local drought conditions prevailed in the extreme northeastern counties in late summer. THRIPS infestations were light except in local areas. Some early season applications for control were made. Plant recovery from thrips attack was rapid. SPIDER MITE infestations caused little trouble except in the extreme northeastern counties. Mite infestations were spotty over the rest of the State and control was needed in only local areas. BOLLWORM (Heliothis sp.) infestations did not occur in serious numbers in 1955. Insecticidal applications for boll weevil control was largely responsible for the light bollworm damage even though moth flight and egg deposition was heavy in late July and August. Many farmers used corn as a trap crop for bollworm moths and green corn was available throughout the growing season in most areas. Larval collections of bollworms from cotton totaled 423 of which only 7 or 1.6 percent were Heliothis virescens. COTTON APHID (Aphis gossypii)populations built up in most areas toward the latter part of the growing season. Damage was generally light. Late season applications of insecticide for boll weevil tended to keep infestations from getting out of hand. Locally heavy infestations of COTTON FLEAHOPPER (Psallus seriatus) appeared in parts of east central area. Elsewhere, they were light to non-existent. COTTON LEAFWORM (Alabama argillacea) appeared in heavy numbers in the upper Arkansas River Valley late in the season but caused no serious damage. Eastern Arkansas had few leafworms suggesting that moth flight from Texas was directly north rather than to the northeast. A single larva of the BROWN COTTON LEAFWORM (Acontia dacia) was taken in Hempstead County in early October. The major insect problem of 1955 was BOLL WEEVIL. Except in the Arkansas River Valley and very local areas in the northeastern and southwestern counties the number of weevils emerging from hibernation was very light. Emergence of over-wintered adults dragged out through early July so that there was not a sharp break between broods except in single fields. Weather conditions were very favorable to weevil development during this period and most fields having infestations in June were on schedule by mid or late July. Second-generation adults appeared in heavy numbers by August 10. Frequent showers and rank growth hindered satisfactory control operations. Moderate weather conditions prevailed through September, October and early November. Much of the cotton set on second growth. Late season activity of boll weevil adults in the fields was observed regularly at Varner, less so at Hope and at Eudora in Chicot County. On a per acre basis the counts at Varner ranged from 4333 adults per acre on October 7 to 496 per acre November 12. Tanglefoot traps located near these fields showed that the heaviest movement of adults occurred the week of November 7 during the season's first sub-freezing weather. At Eudora, the numbers ranged from 4358 per acre October 24 to 587 per acre November 8. The counts of Hope averaged 13,734 per acre on October 24. Only an occasional weevil could be found on November 16, following a hard freeze. While no counts were made, weevils were still present in fields of northeastern areas the week of November 14.

### Forest and Ornamental Insects

Damage by Nantucket pine moth (Rhyacionia frustrana) was lighter in 1955, reflecting more favorable growing conditions. A PINE SAWFLY (Neodiprion taedae linearis) increased over 1954, infesting several hundreds of acres in eastern areas. Defoliation was not too severe, however. Ips sp. caused less damage than in 1954, but attacks by the BLACK TURPENTINE BEETLE (Dendroctonus terebrans) increased. WEEVILS (Hylobius pales, Pissodes nemorensis and Pachylobius picivorus) attacking new plantings destroyed more than 3,000 acres replanted following burns in 1954. As many as 17 adults were found on a single seedling. A survey of insect damage to 7,503,200 acres of primarily shortleaf-loblolly pine provided an estimated loss of 20,033,544 board feet of timber caused by insects. The net loss, after salvage, including cost of control, is thus estimated to be $525,224.00. This compares with a loss of $832,500.00 in 1954. Complete figures on loss of new plantings are not available. However, the value of known losses was set at $8,550.00. The above figures do not include any losses to hardwoods by insect activity. ELM LEAF BEETLE (Galerucella xanthomelaena) damage was heavy on Chinese elms over all but the northwestern counties. Damage to fruit and nursery stock by various species of insects is estimated to be $34,000.00 during 1955.

## Livestock Pests

Weather conditions favored HORNFLY (Siphona irritans) infestations which were comparatively heavy throughout the season. LICE and TABANIDS showed no sharp change over 1954. Weather favored TICK infestations and while numbers were not particularly heavy, the trend of infestations was upward. Reports were received of serious SCREW-WORM attack (Callitroga sp.) from several counties of the State, particularly on late-dropped calves. CATTLE GRUBS (Hypoderma sp.) were not much different than in 1954.

## Insects of Medical Importance

During 1955, one civilian case of malaria was reported from Conway County and five cases from Camp Chaffee. MOSQUITO and FLY control programs were conducted by County Health Units in 14 delta counties at a cost of approximately $40,000.00. MOSQUITO control programs were conducted in 24 towns at a cost of $55,000.00. BEDBUGS (Cimex lectularius) appeared more numerous than in several years.

## Beneficial Insects

During 1955, 17,603 colonies of BEES were inspected. Of these 109 were infested by American foul brood, 15 with European foul brood. This compares with 330 and 17 respectively for 1954. Value of the colonies lost is approximately $3,100.00.

## Miscellaneous Insects

COCKROACHES (Supella supellectilium, Blattella germanica and Blatta orientalis) increased as pests in households, restaurants and hotels during 1955. TERMITES and POWDER POST BEETLES increased in 1955. The cost of control alone amounted to $906,120.00 compared with $840,000.00 in 1954.

## Acknowledgments

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## SUMMARY OF INSECT CONDITIONS - 1955

## ALASKA

Reported by R. H. Washburn

### Livestock Insects

MOSQUITOES were worst in open pasture as well as woods in six years. Several species Culiseta and Aedes were involved from early June to mid-August. Normal troublesome period ends late June. CATTLE BITING LOUSE (Bovicola bovis) and LONG-NOSED CATTLE LOUSE (Linognathus vituli) were troublesome on calves in Matanuska Valley area.

### Ornamental Insects

A BIRCH APHID (Euceraphis betulae) was especially troublesome in cities where white birch is used as an ornamental. Honeydew was very objectionable. APPLE GRAIN APHID (Rhopalosiphum fitchii) was a pest in many greenhouses. GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) was troublesome in Fairbanks greenhouses.

### Vegetable, Small Fruits, Forage Crop Insects

CUTWORMS were a very minor problem during the season. TURNIP MAGGOT (Hylemya floralis) caused usual widespread injury to cruciferous crops throughout the Territory. ONION MAGGOT (Hylemya antiqua) injured green onions in one area of Matanuska Valley. MEADOW SPITTLEBUG (Philaenus leucophthalmus) was numerous as usual in strawberries, raspberries and other plants in southeast Alaska. A STRAWBERRY ROOT WEEVIL (Brachyrhinus sp. ) was found in Wasilla area. First Alaskan record. URTICARIOUS CATERPILLARS caused considerable annoyance in Koyuk River area especially to persons picking berries. A WIREWORM (Ctenicera lobatus) was injurious to potatoes in limited area of Matanuska Valley. GARDEN SLUGS were a nuisance in gardens for first time in Anchorage area late in August.

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